

DevOps Training-Day-1

Installing and Setting Up WSL with Ubuntu on Windows 10

Step 1: Enable WSL

Before installing Ubuntu, ensure that WSL is enabled on your Windows system. **Enable WSL Feature**

1. Open **PowerShell** as Administrator and run:
2. `wsl --install`

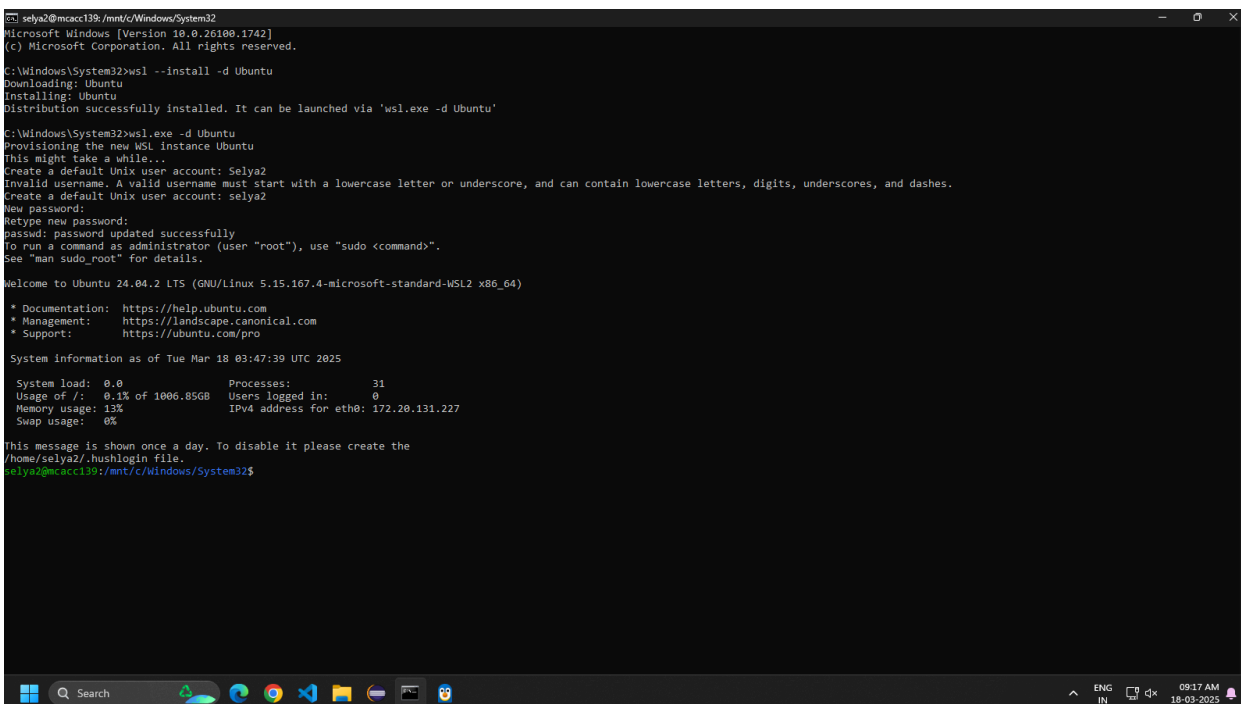
This installs the default Linux distribution and enables necessary

components. 3. If WSL is already installed but not enabled, use:

4. `dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart`
5. Enable the Virtual Machine Platform feature (required for WSL 2): 6. `dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart`
7. Restart your computer to apply changes.

Step 2: Install Ubuntu

1. Open **Command Prompt** or **PowerShell** and run:
2. `wsl --install -d Ubuntu`



```
selya2@macc139: /mnt/c/Windows/System32
Microsoft Windows [Version 10.0.26100.1742]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>wsl --install -d Ubuntu
Downloading: Ubuntu
Installing: Ubuntu
Distribution successfully installed. It can be launched via 'wsl.exe -d Ubuntu'

C:\Windows\System32>wsl.exe -d Ubuntu
Provisioning the new WSL instance Ubuntu
This might take a while...
Create a default Unix user account: Selya2
Invalid username. A valid username must start with a lowercase letter or underscore, and can contain lowercase letters, digits, underscores, and dashes.
Create a default Unix user account: selya2
New password:
Retype new password:
passwd: password updated successfully
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 5.15.167.4-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Tue Mar 18 03:47:39 UTC 2025

System load:  0.0          Processes:    31
Usage of /:   0.1% of 1006.85GB  Users logged in: 0
Memory usage: 13%          IPv4 address for eth0: 172.20.131.227
Swap usage:   0%

This message is shown once a day. To disable it please create the
/home/selya2/.hushlogin file.
selya2@macc139:/mnt/c/Windows/System32$
```

If the installation fails due to timeout issues, retry the command after shutting down

WSL: `wsl --shutdown`

`wsl --install -d Ubuntu`

3. Once installed, start Ubuntu:
4. `wsl.exe -d Ubuntu`

```
Administrator: C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe
Microsoft Windows [Version 10.0.26100.1742]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>wsl --install -d Ubuntu
Downloading: Ubuntu
Installing: Ubuntu
Distribution successfully installed. It can be launched via 'wsl.exe -d Ubuntu'

C:\Windows\System32>wsl.exe -d Ubuntu
Provisioning the new WSL instance Ubuntu
This might take a while...
Create a default Unix user account: tudent
```

Step 3: Set Up Ubuntu

When Ubuntu runs for the first time, it will ask you to create a new user account.

1. **Enter a username** (must start with a lowercase letter or underscore, and contain only lowercase letters, digits, underscores, and dashes).
2. **Set a password** (enter and confirm the password). If passwords do not match, you will need to retry.
3. Once successful, Ubuntu will be set up and ready to use.

```
selya2@mcacc139: /mnt/c/Windows/System32
Microsoft Windows [Version 10.0.26100.1742]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>wsl --install -d Ubuntu
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/home/selya2/.hushlogin file.
selya2@mcacc139: /mnt/c/Windows/System32$
```

Step 4: Verify Installation

To check the installed distributions and their versions:

```
wsl -l -v
```

To verify Ubuntu is running:

```
wsl -d Ubuntu
```

Step 5: Configure Ubuntu

Update System Packages

After logging in, update the package list and upgrade installed packages:

```
sudo apt update && sudo apt upgrade -y
```

Set Default WSL Version

To use WSL 2 as the default version for future installations:

```
wsl --set-default-version 2
```

To check the current WSL version:

```
wsl -l -v
```

To convert an existing installation to WSL 2:

```
wsl --set-version Ubuntu 2
```

Step 6: Enable .hushlogin to Suppress Login Message

To disable the daily login message, create a .hushlogin file in your home directory: touch ~/.hushlogin

Additional Commands

Restart WSL:

```
wsl --shutdown
```

Uninstall a Distribution:

```
wsl --unregister Ubuntu
```

Access Windows Files in WSL:

```
cd /mnt/c
```

Conclusion

You have successfully installed and set up WSL with Ubuntu on Windows 10. You can now use the Ubuntu terminal to run Linux commands and manage your system efficiently.

Step-by-Step Guide to Creating a Freestyle Job in Jenkins to Install Nginx on a Local Ubuntu VM

Prerequisites for Setting Up a Freestyle Job to Install Nginx in Jenkins

Before creating the Freestyle Job, ensure that the following prerequisites are

met: **1. Install Jenkins on Ubuntu (If Not Installed)**

If Jenkins is not installed on your Ubuntu VM, follow these steps:

Step 1: Update Package Lists

```
sudo apt update -y
```

Step 2: Install Java (Required for Jenkins)

```
sudo apt install -y openjdk-17-jdk
```

Step 3: Verify Java Version

```
java -version
```

```
etya2@mcacc139:~$ java --version
penjdk 21.0.6 2025-01-21
penJDK Runtime Environment (build 21.0.6+7-Ubuntu-124.04.1)
penJDK 64-Bit Server VM (build 21.0.6+7-Ubuntu-124.04.1, mixed mode, sharing)
```

Step 4: Add Jenkins Repository Key

(Note: The apt-key add command is deprecated in newer Ubuntu versions. Use the correct method below.)

Correct Way to Add Jenkins Repository (Without apt-key)

Step 4.1: Add Jenkins GPG Key

```
wget -q -O- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee
/usr/share/keyrings/jenkinskeyring.asc > /dev/null
```

Step 4.2: Add Jenkins Repository

```
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian
stable binary/" |
```

```
sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null
```

Step 5: Install Jenkins

```
sudo apt update -y
```

```
sudo apt install -y jenkins
```

Step 6: Start and Enable Jenkins Service

```
sudo systemctl start jenkins
```

```
sudo systemctl enable jenkins
```

Step 7: Check Jenkins Status

`sudo systemctl status jenkins`

```
selya2@mcacc139:~$ sudo systemctl start jenkins
selya2@mcacc139:~$ sudo systemctl enable jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sy
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
selya2@mcacc139:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-03-18 05:56:46 UTC; 2min 29s ago
```

2. Access Jenkins Web Interface

Jenkins will be available at `http://<VM_IP>:8080`

To Get the Jenkins Server URL, Follow These Steps:

Method 1: Check the Default URL

By default, Jenkins runs on port 8080. Open in a browser:

`http://<your-server-ip>:8080`

If you're on the same machine as Jenkins, use:

`http://localhost:8080`

Method 2: Get Server IP Address

`hostname -I`

or

`ip a | grep inet`

Method 3: Check Jenkins Logs (If Unable to Access)

`sudo journalctl -u jenkins --no-pager --lines=50`

Look for lines mentioning *"Jenkins is fully up and running"* and the URL.

3. Access Jenkins Web Interface and Log In

1. Open a browser and go to `http://<JENKINS_SERVER_IP>:8080`
2. Enter the username (admin) and the admin password retrieved from the following command:

`sudo cat /var/lib/jenkins/secrets/initialAdminPassword`

3. Choose *Install Suggested Plugins* (recommended) or manually select plugins.

4. Ensure Sudo Access for Jenkins User

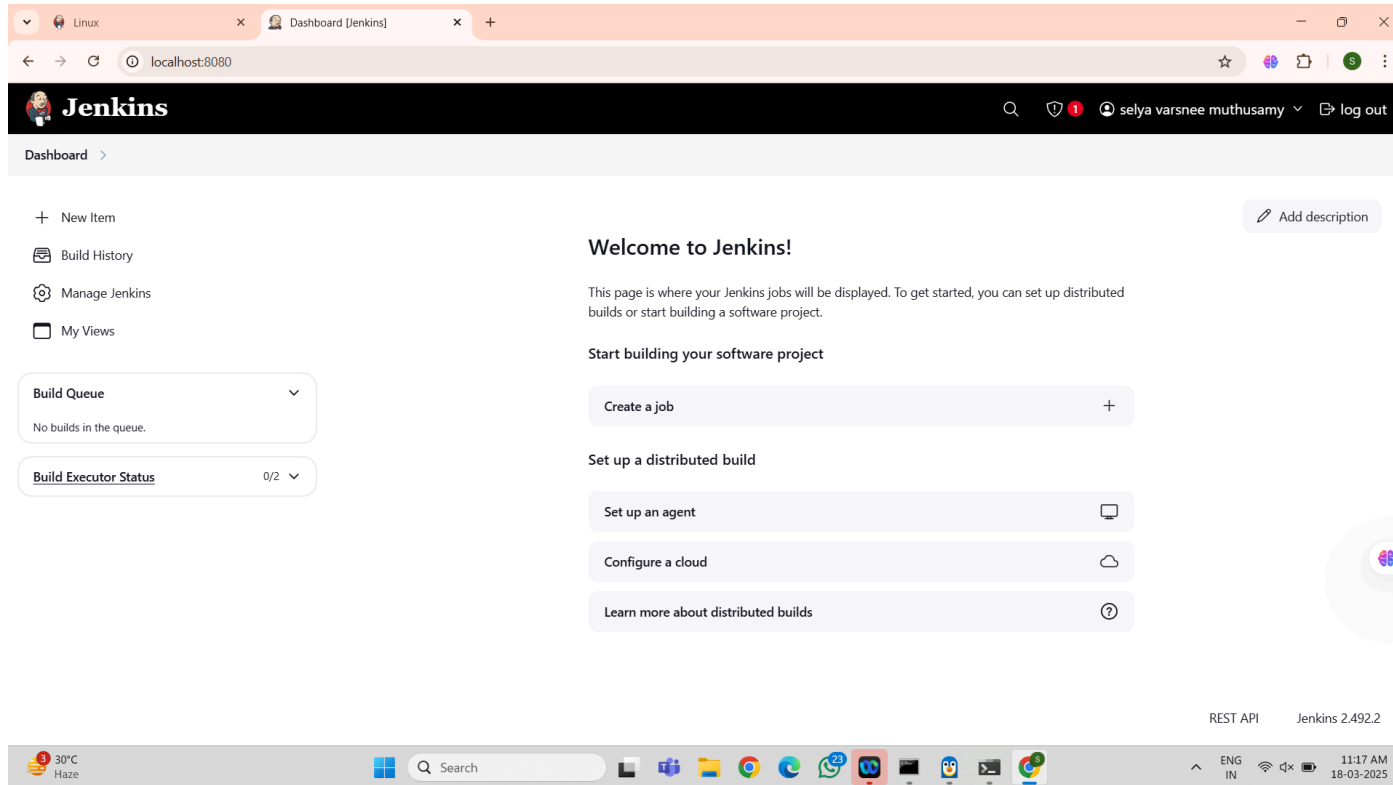
Jenkins runs as a system user (jenkins). If your script requires sudo, allow Jenkins to execute commands without a password:

`sudo visudo`

Add the following line at the end of the file:

`jenkins ALL=(ALL) NOPASSWD: ALL`

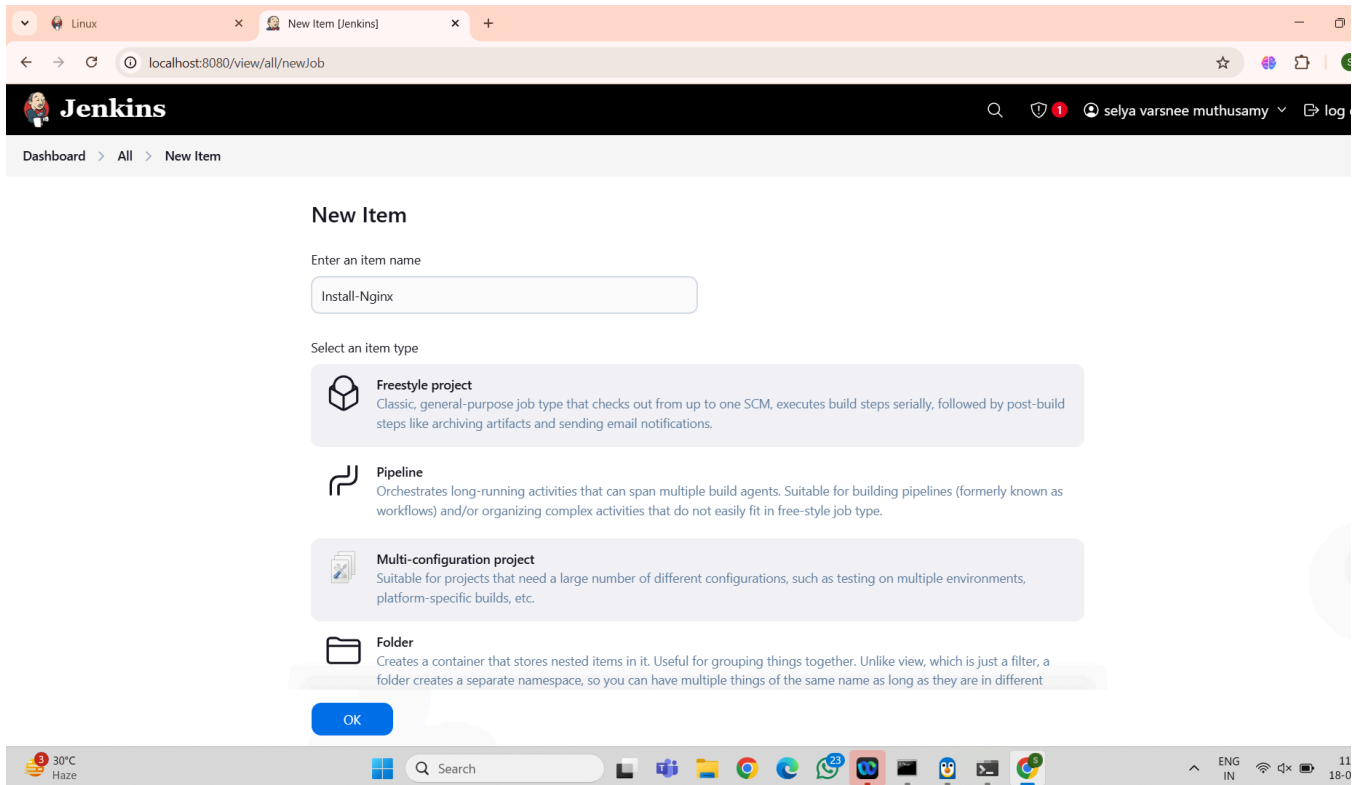
Save and exit.



Step-by-Step Guide to Creating a Freestyle Job in Jenkins to Install

Nginx Step 1: Create a New Freestyle Job

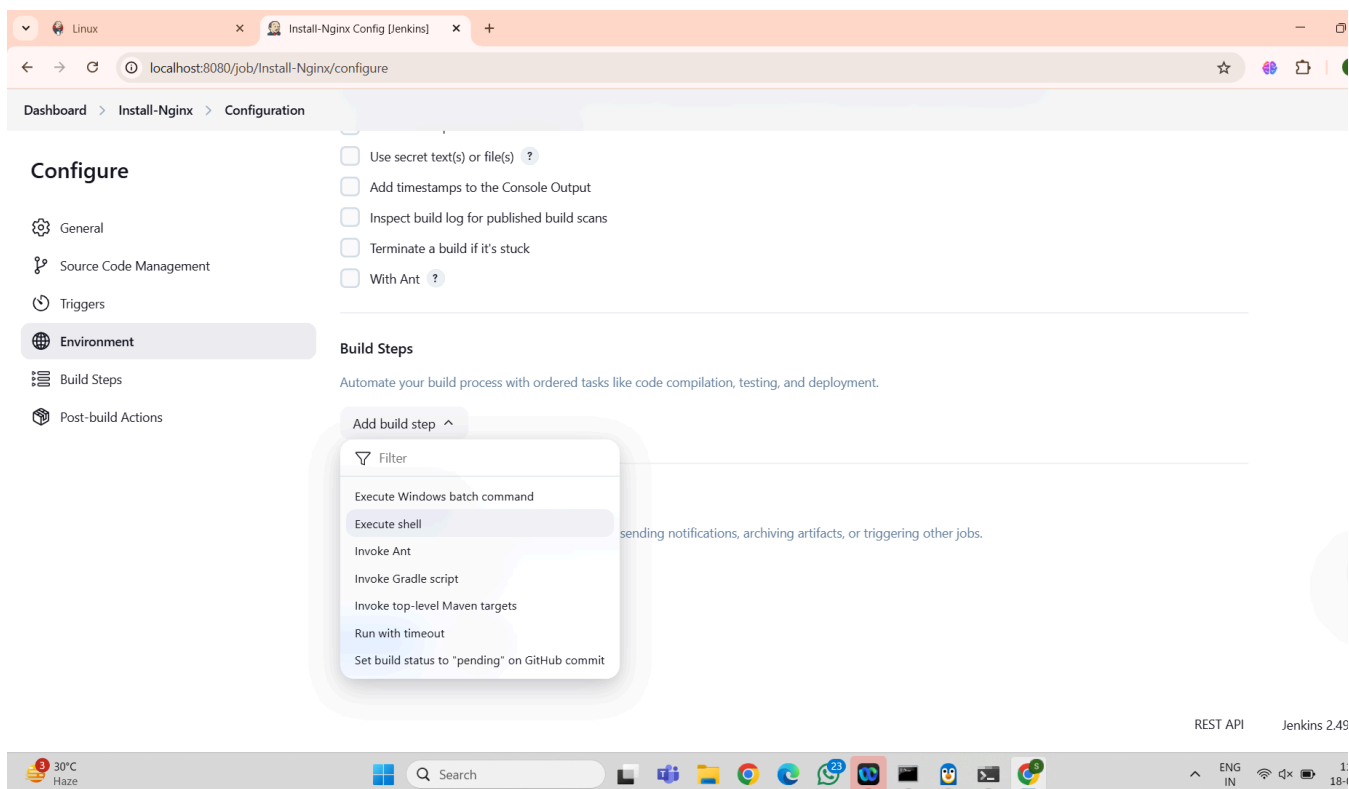
1. Click on **New Item** from the Jenkins Dashboard.
2. Enter a name for the job, e.g., *Install-Nginx*.
3. Select **Freestyle project**.
4. Click **OK**.



Step 2: Configure the Job

Add Build Step

1. Scroll down to **Build** → Click *Add build step* → Select **Execute shell**.
2. Paste the following script in the command box:



```
#!/bin/bash
```

```
echo "Updating package lists..."
```

```
sudo apt update -y
```

```
echo "Installing Nginx..."
```

```
sudo apt install -y nginx
```

```
echo "Starting Nginx service..."
```

```
sudo systemctl start nginx
```

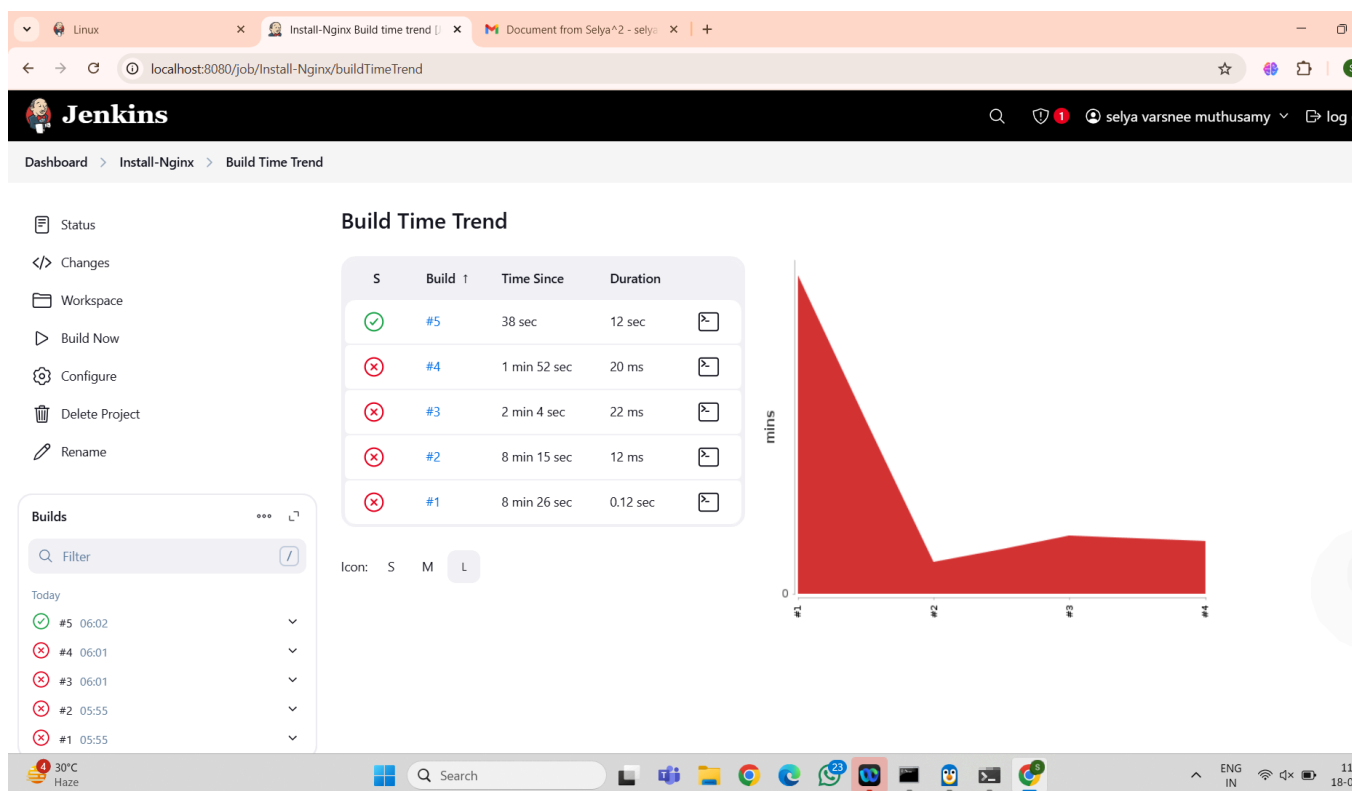
```
echo "Enabling Nginx to start on boot..."
```

```
sudo systemctl enable nginx
```

```
echo "Nginx Installation Completed!"
```

Step 3: Save and Run the Job

1. Click **Save**.
2. Click **Build Now**.
3. Check the **Console Output** to verify the installation.

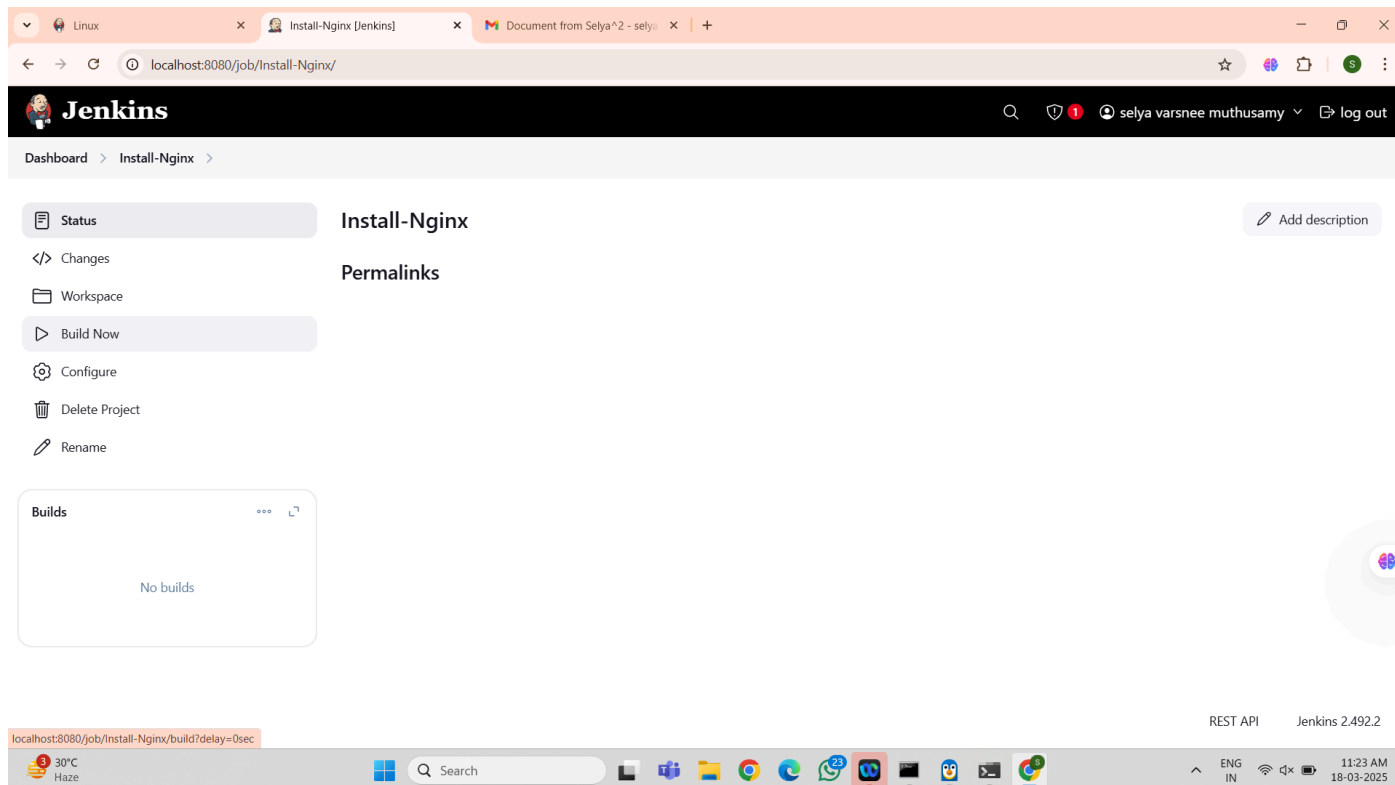


Step 4: Verify the Installation

1. Check Nginx Status

```
systemctl status nginx
```

If running, you should see output like *"active (running)"*.



2. Open Nginx in Browser

`http://<VM_IP>`

You should see the default Nginx welcome page.

Conclusion

You have successfully set up a Jenkins Freestyle Job to install Nginx on a local Ubuntu VM. This guide covers everything from Jenkins installation, configuration, and running the job to verify that Nginx is installed and running correctly.

Now, your Jenkins automation is ready to deploy Nginx effortlessly!